Resilience and Professional Quality of Life of Nurses in Tertiary Hospitals, The People's Republic of China*

ความสามารถในการปรับตัวสู่สภาวะปกติและคุณภาพชีวิตในวิชาชีพของพยาบาลในโรงพยาบาลตติยภูมิ สาธารณรัฐประชาชนจีน*

โจว	ลี่**	Zhou	Li**
ฐิติณัฏฐ์	อัคคะเดชอนันต์***	Thitinut	Akkadechanunt***
อรอนงค์	วิชัยคำ***	Orn-anong	Wichaikhum***

Abstract

Professional quality of life (ProQOL) of nurses is a significant issue that affects nurse retention and nurses' job satisfaction. This descriptive correlation study aimed to describe the resilience and professional quality of life of nurses, and to examine the relationship between resilience and each dimension of ProQOL for nurses in tertiary hospitals in the People's Republic of China. The participants included 364 nurses working in different units of three tertiary hospitals in western Yunnan province. The research instruments consisted of the Demographic Data Form, the Chinese version of the Connor Davidson Resilience Scale (CD-RISC), and the Chinese version of the Professional Quality of Life version 5 (ProQOL 5). The Chinese version of the CD-RISC and ProQOL5 were confirmed for validity by the developers. The Cronbach alpha reliability of the Chinese version of the CD-RISC was 0.88, and for the three subscales of the Chinese version of the ProQOL (compassion satisfaction, burnout, and compassion fatigue) were 0.94, 0.89, and 0.72, respectively. Descriptive statistics and Spearman's rank-order correlation were used to analyze the data.

The results of this study showed that:

1. The mean score for resilience of the participants was 64.43 (SD = 11.56).

2. The mean scores for each dimension of the ProQOL, including compassion satisfaction ($\bar{X}$ = 31.83, SD = 7.01), burnout ($\bar{X}$ = 25.82, SD = 5.28), and compassion fatigue ($\bar{X}$ = 26.33, SD = 5.03) for the participants, were at average levels.

3. There was a moderately positive relationship between resilience and compassion satisfaction (r_s = .50, $p < .01$.), moderately negative relationships between resilience and burnout (r_s = –.48, $p < .01$), and weakly negative relationships between resilience and compassion fatigue (r_s = –.16, $p < .01$).

The results of this research provide basic information for nurse administrators to develop proper strategies for improving nurses' resilience in order to increase compassion satisfaction and decrease burnout and compassion fatigue of nurses in tertiary hospitals in the People's Republic of China.

Keywords: Resilience; Professional quality of life; Nurses; Tertiary hospitals

* Master's thesis, Master of Nursing Science program (International Program), Faculty of Nursing, Chiang Mai University

** Corresponding author, Graduate Student of Nursing Science program (International Program), Faculty of Nursing, Chiang Mai University; e-mail: zhouli-yinghu@163.com

*** Assistant Professor, Faculty of Nursing, Chiang Mai University

Received 28 June 2019; Revised 31 July 2019; Accepted 20 August 2019

บทคัดย่อ

คุณภาพชีวิตในวิชาชีพของพยาบาลเป็นประเด็นสำคัญที่ส่งผลกระทบต่อการคงอยู่ในงาน และความพึงพอใจของพยาบาล การวิจัยเชิงพรรณนาแบบหาความสัมพันธ์ครั้งนี้มีวัตถุประสงค์เพื่อศึกษาความสามารถในการปรับตัวสู่สภาวะปกติและคุณภาพชีวิตในวิชาชีพของพยาบาล และเพื่อศึกษาความสัมพันธ์ระหว่างความสามารถในการปรับตัวสู่สภาวะปกติ และองค์ประกอบแต่ละด้านของคุณภาพชีวิตในวิชาชีพของพยาบาล ในโรงพยาบาลตติยภูมิ สาธารณรัฐประชาชนจีน กลุ่มตัวอย่างประกอบด้วยพยาบาลจำนวน 364 ราย ที่ปฏิบัติงานในหน่วยงานต่าง ๆ ของโรงพยาบาลตติยภูมิ 3 แห่ง ในภาคตะวันตกของมณฑลยูนนาน สาธารณรัฐประชาชนจีน เครื่องมือที่ใช้ในการวิจัยประกอบด้วย แบบบันทึกข้อมูลส่วนบุคคล แบบประเมินความสามารถในการปรับตัวสู่สภาวะปกติ ของ คอนเนอร์ และเดวิดสัน ฉบับภาษาจีน และแบบประเมินคุณภาพชีวิตในวิชาชีพ ฉบับที่ 5 ฉบับภาษาจีน ซึ่งแบบประเมินความสามารถในการปรับตัวสู่สภาวะปกติ ของ คอนเนอร์ และเดวิดสัน ฉบับภาษาจีน และแบบประเมินคุณภาพชีวิตในวิชาชีพ ฉบับที่ 5 ฉบับภาษาจีน ได้ผ่านการตรวจสอบความตรงตามเนื้อหาโดยผู้พัฒนาเครื่องมือ ค่า Cronbach alpha ของแบบประเมินความสามารถในการปรับตัวสู่สภาวะปกติ ของ คอนเนอร์ และเดวิดสัน เท่ากับ 0.88 และสำหรับ 3 องค์ประกอบของแบบประเมินคุณภาพชีวิตในวิชาชีพ ได้แก่ ความพึงพอใจในงาน ความเบื่อหน่ายในการทำงาน และความเมื่อยล้าในการทำงาน เท่ากับ 0.94, 0.89 และ 0 .72 ตามลำดับ วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนา และสถิติ Spearman's rank-order correlation

ผลการวิจัยครั้งนี้พบว่า

1. คะแนนเฉลี่ยของความสามารถในการปรับตัวสู่สภาวะปกติของกลุ่มตัวอย่างเท่ากับ 64.43 (SD = 56.11)

2. คะแนนเฉลี่ยขององค์ประกอบแต่ละด้านของคุณภาพชีวิตในวิชาชีพ ได้แก่ ความพึงพอใจในงาน ($\bar{X}$ = 31.83, SD = 7.01) ความเบื่อหน่ายในการทำงาน ($\bar{X}$ = 25.82, SD = 5.28) และความเมื่อยล้าในการทำงาน ($\bar{X}$= 26.33, SD = 5.03) อยู่ในระดับปานกลาง

3. ความสามารถในการปรับตัวสู่สภาวะปกติมีความสัมพันธ์ทางบวกในระดับปานกลางกับความพึงพอใจในงาน (r_s = .50, p < .01.) มีความสัมพันธ์ทางลบระดับปานกลางกับความเบื่อหน่ายในการทำงาน (r_s = –.48, p < .01) และมีความสัมพันธ์ทางลบระดับต่ำกับความเมื่อยล้าในการทำงาน (r_s = –.16, p < .01)

ผลการศึกษาครั้งนี้สามารถใช้เป็นข้อมูลพื้นฐานสำหรับผู้บริหารทางการพยาบาลในการพัฒนากลยุทธ์ที่เหมาะสมสำหรับการส่งเสริมความสามารถในการปรับตัวสู่สภาวะปกติของพยาบาล เพื่อที่จะช่วยเพิ่มความพึงพอใจในงาน ลดความเบื่อหน่ายและความเมื่อยล้าในการทำงานของพยาบาลในโรงพยาบาลตติยภูมิ สาธารณรัฐประชาชนจีน

คำสำคัญ: ความสามารถในการปรับตัวสู่สภาวะปกติ คุณภาพชีวิตในวิชาชีพ พยาบาล โรงพยาบาลตติยภูมิ

* วิทยานิพนธ์หลักสูตรพยาบาลศาสตรมหาบัณฑิต (หลักสูตรนานาชาติ)คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

** ผู้เขียนหลัก นักศึกษาหลักสูตรพยาบาลศาสตรมหาบัณฑิต (หลักสูตรนานาชาติ) คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่ e-mail: zhouli-yinghu@163.com

*** ผู้ช่วยศาสตราจารย์ คณะพยาบาลศาสตร์ มหาวิทยาลัยเชียงใหม่

วันที่รับบทความ 28 มิถุนายน 2562 วันที่แก้ไขบทความ 31 กรกฎาคม 2562 วันที่ตอบรับบทความ 20 สิงหาคม 2562

Background and Significance

Professional quality of life (ProQOL) refers to the quality one feels in relation to their work as a helper (Stamm, 2010) and includes three components, which are compassion satisfaction (CS), burnout (BO), and compassion fatigue (CF). According to Stamm, CS refers to the pleasure you derive from being able to do your work well. BO refers to feelings of hopelessness and difficulty in dealing with work or in doing one's job effectively. CF is about work-related, secondary exposure to people who have experienced extremely or traumatically stressful events. The phenomena of BO and CF are significant for healthcare organizations because they can help to interpret and predict the correlation among nurse retention, turnover, patient's safety, and satisfaction (Sabo, 2011). Meanwhile, CS could generate compassion that enables one to thrive and allows an individual to maintain career enthusiasm (Radey & Figley, 2007). Due to the tensions resulting from both physical and psychological stress of caring for patients, nurses are particularly prone to BO, CF and reduced CS (Kim, Han, & Kim, 2015) while professional quality of life (ProQOL) is the balance between the CS, BO and CF (Stamm, 2009). Based on the literature review, research on ProQOL of nurses has been conducted in several countries, but results have been inconsistent.

Several factors have been found to be related to ProQOL, such as job satisfaction (Muliira & Ssendikadiwa, 2016), clinical competence (Kim, Han, Kwak, & Kim, 2015b), compassion competence (Lee & Seomun, 2016), perceived stress (Amin, Vankar, Nimbalkar, & Phatak, 2015), support (Yu, Jiang, & Shen, 2016), ethical dilemmas and nursing professional values (Kim et al., 2015), and resilience (McGarry et al., 2013; Søndenaa, Lauvrud, Sandvik, Nonstad, & Whittington, 2013; Leners, Sowers, Griffin, & Fitzpatrick, 2014; Hegney, Rees, Eley, Osseiran-Moisson, & Francis, 2015; Craigie et al., 2016). Resilience is prominent in assisting nurses to develop skills that will aid them in bouncing back and coping in the face of adversity, sustaining them through difficult and challenging working environments (Kornhaber & Wilson, 2011). Moreover, it has been shown that those who cannot develop resilience to overcome workplace adversity are more likely to leave their profession (Cameron & Brownie, 2010) while resilient nurses will not just stay in the nursing workforce but will also provide a higher quality of patient care (Drury, Craigie, Francis, Aoun, & Hegney, 2014). Promoting individual resilience showed improvement in BO, reduction in CF, and an improvement in CS (Cocker & Joss, 2016). Resilience is defined as a personal quality that enables one to thrive in the face of adversity, and can also be viewed as a measure of successful stress-coping ability (Connor & Davidson, 2003), which includes personal competence, strengthening effects of stress, positive acceptance of change, control, and spiritual influences.

Previous studies on the relationship between resilience and each dimension of the ProQOL have yielded various results. Four studies proved resilience has a significant positive relationship with CS, but a significant negative relationship with BO and CF/STS (McGarry et al., 2013; Hegney et al., 2015; Leners, Sowers, Griffin, & FitzpatricK, 2014; Cooke, Doust, & Steele, 2013) while one proved no relationship (Søndenaa et al., 2013). In China, the situation of both nurses' resilience and professional quality of life is severe, and the relationship between them is unknown. Most

resilience studies from China found that the resilience mean scores were far lower than those from other countries. For professional quality of life, most domestic research has focused more on CF while few studies have referred to the CS, separating the integrity of the concept of ProQOL (Yang, Xiao, Hu, & Zou, 2015). What more, it can be seen from previous studies that nurses in tertiary hospitals in western Yunnan province face different work adversity, as well as some unpleasantness with professional quality of life (Zhang et al., 2013). However, there have been no studies of resilience or ProQOL conducted in tertiary hospitals in western Yunnan province. According to the situation of the two variables, this study described resilience and ProQOL of nurses and the relationship between resilience and each dimension of ProQOL of nurses in tertiary hospitals in the People's Republic of China.

Objectives

This descriptive correlational study aimed to describe resilience and professional quality of life, which includes compassion satisfaction, burnout, and compassion fatigue, and to examine the relationship between resilience and each dimension of the ProQOL of nurses in tertiary hospitals, the People's Republic of China.

Conceptual Framework

The concept of resilience was based on Richardson (2002) and includes five components: personal competence, strengthening effects of stress, positive acceptance of change, control, and spiritual influences. The concept of professional quality of life was based on the conceptual model of professional quality of life developed by Stamm (2010) which consists of three components: compassion satisfaction, burnout, and compassion fatigue. According to literature review, nurses with high resilience and CS will have low CF and BO (She, 2014; McGarry et al., 2013). Controversially, nurses with low resilience and CS will have high CF and BO (Stanton, Houser, Rieche, Burnham, & McDougall, 2015). Therefore, the relationship between resilience and each dimension of professional quality of life of nurses in tertiary hospitals in western Yunnan province was examined in this study.

Methodology

A descriptive correlational study was designed to describe resilience and the level of each dimension of professional quality of life, and to examine the relationship between resilience and each dimension of professional quality of life for nurses in tertiary hospitals in China.

Population and Sample

The population included 2,357 nurses who received qualification certificates and practice certificates from 8 nursing units at three tertiary hospitals in western Yunnan province: Dali Bai Autonomous Prefecture People's Hospital (DBAPPH), Chuxiong Yi Autonomous Prefecture People's Hospital (CYAPPH), and Dehong Dai and Jingpo Autonomous Prefecture People's Hospital (DDJAPPH).

Sample size was calculated by Yamane's (1973) formula and consisted of 410 nurses. The proportional stratified random sampling method was used to determine the number of nurses from each hospital, and subjects were selected by random sampling from the name lists in the 8 nursing units.

Research Instrument

The research instrument in this study was a set of questionnaires and consisted of three parts:

1. The Demographic Data Form was designed to collect nurses' information, which included hospital, department, gender, age, marital status, religion, education level, professional title, and years of work experience in their present hospital.

2. The Connor Davidson Resilience Scale (CD-RISC), developed by Connor Davidson (2003) and translated into Chinese by Yu & Zhang (2007), consists of 25 items with five components: personal competence (8 items), strengthening effects of stress (7 items), positive acceptance of change (5 items), control (3 items), and spiritual influences (2 items). Each item is rated on a 5-point scale (0 = "not true at all", 1 = "rarely true", 2 = "sometimes true", 3 = "often true", 4 = "true nearly all of the time"), and total scores range from 0 to 100, with higher scores reflecting greater resilience. The validity was confirmed by the developer. The Cronbach's alpha coefficient of the Chinese version of the CD-RISC was 0.88.

3. The Chinese version of the Professional Quality of Life version 5 (ProQOL 5) was developed by Stamm (2009), and the Chinese version was provided by the ProQOL organization and included 30 items in all. Ten items each were distributed under three subscales that measured compassion satisfaction, burnout, and compassion fatigue/secondary traumatic stress. Each item was scored on a five-point Likert scale (never = 1, rarely = 2, sometimes = 3, often = 4, and very often = 5), ranging from 0 to 50 for each subscale, and the level was interpreted as follows: 22 or less indicated a low level, 23 to 41 indicated an average level, and 42 or more indicated a high level. Validity was confirmed by the developer. Cronbach's alpha coefficients for each subscale of the ProQOL, including compassion satisfaction, burnout, and compassion fatigue, were 0.94, 0.89, 0.72, respectively.

Ethical Considerations

The study was approved by the Research Ethics Review Committee, Faculty of Nursing, Chiang Mai University, Thailand. Research information sheets were distributed to subjects to inform them about the purpose and method of the study before data collection began. Participation in the study was voluntary, and subjects were informed that they could choose to participate or not and could withdraw from the study at any time. Those who agreed to participate in the study were asked to sign an agreement form. Only coded numbers were used for questionnaires. Subjects were reassured that the information provided would be kept confidential and used for this study only.

Data Collection

Data were collected after receiving permission from the nursing directors of the three hospitals. The researcher explained the research objectives and details of data collection to coordinators assigned by the nursing directors of the target hospitals. In total, 410 questionnaires were distributed, 395 (96.34%) questionnaires were returned after two weeks, and, finally, 364 (88.78%) were completed and used for data analysis.

Data Analysis

By using the Statistical Package for the Social Sciences (SPSS), descriptive statistics, including frequency, percentage, mean, and standard deviation, were used to analyze the demographic data of the participants, resilience, and each dimension of professional quality of life. As the data were not normally distributed, the Spearman's rank-order correlation was used to examine the relationship between resilience and each dimension of the professional quality of life of nurses.

Results

1. The majority of the 364 participants were female (98.08%), aged 21 to 55, with an average age of 31.48 years old (SD = 6.75). Most of the participants (77.48%) were married and were atheists (91.21%). Over half of the participants (52.20%) had a bachelor's degree and were senior nurses (50.55%). Furthermore, 68.13% of the participants had work experience of less than 10 years while 33.52% of the participants worked in the medical department, and 42.31% of them were from Chuxiong Yi Autonomous Prefecture People's Hospital (Table 1).

Table 1 Frequency and Percentage of Demographic Characteristics of the Participants (n = 364)

Demographic characteristics	Frequency (n)	Percentage (%)
Gender		
Female	357	98.08
Male	7	1.92
Age ($\bar{X}$ = 31.48, SD = 6.75, range = 21-55)		
21 – 25	45	12.36
26 – 35	244	67.03
36 – 45	57	15.66
46 – 55	18	4.95
Marital status		
Married	282	77.48
Single	77	21.15
Divorced	3	0.82
Separation/Widowed	2	0.55

Table 1 Frequency and Percentage of Demographic Characteristics of the Participants (n = 364) (continue)

Demographic characteristics	Frequency (n)	Percentage (%)
Religion		
None/Atheist	332	91.21
Buddhism	27	7.42
Islam	4	1.10
Christian	1	0.37
Education level		
Diploma	8	2.20
Associated Degree	166	45.60
Bachelor's Degree	190	52.20
Professional title		
Junior Nurse	109	29.95
Senior Nurse	184	50.55
Nurse-in-charge	71	19.50
Years of experience ($\bar{X}$ = 9.89, SD = 7.44, range = 1-37)		
1-10	248	68.13
11-20	73	20.05
21-30	35	9.62
>31	8	2.20
Unit		
Medical	122	33.52
Surgical	101	27.75
OB-GYN	33	9.06
Pediatric	28	7.69
Emergency Room	23	6.32
Operation Room	23	6.32
Intensive Care Unit	21	5.77
OPD	13	3.57
Hospital		
CYAPPH	154	42.31
DBAPPH	117	32.14
DDJAPPH	93	25.55

2. The mean score for resilience of the participants was 64.43 (SD = 11.56). The mean scores of the five components, including personal competence, strengthening effects of stress, positive acceptance of change, control, and spiritual influences, were 21.80 (SD = 4.31), 16.82 (SD = 3.64), 13.70 (SD = 2.69), 7.74 (SD = 2.03), and 4.37 (SD = 1.40), respectively (Table 2).

Table 2 Minimum, Maximum, Mean, and Standard Deviation of Resilience of the Participants (n = 364)

Resilience	Items	Minimum	Maximum	Mean	SD
Total	25	28	100	64.43	11.56
Personal competence	8	9	32	21.80	4.31
Strengthening effects of stress	7	8	28	16.82	3.64
Positive acceptance of change	5	6	20	13.70	2.69
Control	3	2	12	7.74	2.03
Spiritual influences	2	0	8	4.37	1.40

3. The mean score for each dimension of professional quality of life of the participants was at an average level (Table 3).

Table 3 Mean and Standard Deviation of Each Dimension of Professional Quality of Life of the Participants (n = 364)

ProQOL	Minimum	Maximum	Mean	SD	Level
CS	11	50	31.83	7.01	Average
BO	11	42	25.82	5.28	Average
CF	14	45	26.33	5.03	Average

4. There was a moderately positive relationship between resilience and compassion satisfaction (r_s = .50, p < .01.); a moderately negative relationship between resilience and burnout (r_s = –.48, p < .01); and a weakly negative relationship between resilience and compassion fatigue (r_s = –.16, p < .01) (Table 4).

Table 4 Relationship between Resilience and Each Dimension of Professional Quality of Life of the Participants (n = 364)

	ProQOL	r_s	*p*
Resilience	Compassion satisfaction	.50	0.000
	Burnout	-.48	0.000
	Compassion fatigue	-.16	0.003

Discussion

1. Resilience of the nurses

The mean score for resilience of nurses in this study was 64.43 (SD = 11.56). Compared with Connor and Davidson's validation research, the result was lower than general community

samples in the U.S. which reported a mean score of 80.4 (SD = 12.8) (Connor & Davidson, 2003). Additionally, the result is also lower than the high resilience score of 92 that was defined by Mealer, Jones, Newman, McFann, Rothbaum, and Moss (2012). This result indicated that Chinese nurses have lower successful stress coping ability to thrive in the face of adversity. The reason may be because Chinese nurses experience more prominent psychological stress and lower physical and psychological well-being (Shi, Zhao, & Liu, 2011) which affects their resilience to help them adapt well to physical and psychological impairments, the higher stress, and the lower resilience (Ren, Zhou, Huang, Lu, Cheng, & Pan, 2014). In addition, the demographic data showed that the majority of subjects (67.03%) were aged between 26-35 years old, and 68.13% of the nurses had been working for less than 10 years. This may contribute to nurses having lower resilience as previous studies proved older nurses with more experience had higher resilience (Gillespie, Chaboyer, & Wallis, 2009; Su, Guo, Liu, Zhang, Chen, & Lin, 2013; Zhang, Liu, Wang, & Zheng, 2016).

Meanwhile, the results were similar to some other studies in China which summarized resilience mean scores ranging from 51.33 to 68.49 (SD = 3.34 – 18.43). The possible reason is the similarity in culture of Chinese nurses who have the same nursing working conditions and face the same situations, such as nursing shortages, heavy workloads, and overload in hospital occupation. There is inadequate training and continuing education systems for nurses to improve nurses' resilience (Yu, Song, He, & Yu, 2013). Therefore, the results were similar.

2. Each dimension of professional quality of life of nurses

Compassion satisfaction:

The results for this subscale indicated a moderate level ($\bar{X}$ = 31.83, SD = 7.01), indicating that the nurses feel somewhat satisfied with their job of helping others, experiencing happy thoughts, and are happy with the work they accomplish. In the meantime, they still perceived unhappiness with their work. This finding was similar to that of previous studies in Norway (Lauvrud, Nonstad, & Palmstierna, 2009) and in Korea (Kim & Choi, 2012; Kim, et al., 2015, 2015b; Lee & Seomun, 2016) and several Chinese studies. One possible explanation is that nurses in tertiary autonomous hospitals feel happy to keep up with the development of nursing techniques and policies. With the technique development, hospital administrators set up a logistics support system to reduce the time spent by nurses in non-nursing work, thus reducing stress on nurses so that they have more time to directly communicate, serve, and take care of patients (Gu, Chuan, & Zhou, 2007). Therefore, nurses could get more satisfaction from doing nursing work than doing non-nursing work. However, Chinese nurses are always full-time employees while many hospital managers continue to engage in the widespread phenomenon of "heavy medical care, light nursing care". Without a highlighted professional status for nurses, there is a big gap between the expectations of management and the work accomplished by nurses. Therefore, nurses are not satisfied with their work (Qin, Dao, & Wang, 2014).

Burnout:

The result of this subscale indicated a moderate level ($\overline{X}$ = 25.82, SD = 5.28) of burnout indicating that nurses felt difficulty in dealing with their work, could not do their job effectively, and had feelings of disconnectedness. A possible reason is that nurses occupy the same central role in the delivery of health care in all countries. The results are consistent with studies in China (Zhang et al., 2013; Jin, Su, & Lei, 2016; Sun, Li, & Yan, 2016). Because Chinese nurses all perform in the same work contexts and similar situations, this leads nurses to suffer from phenomena such as depletion of energy, feelings of exhaustion, and frustration that consequently leads to burnout. However, recently, nurses in Chinese hospitals have had a better working environment. Also, government-sponsored reforms have been underway to increase the number of nurses and improve their education (You et al., 2013) thereby reducing nurse burnout.

Compassion fatigue:

The results for this subscale indicated a moderate level ($\overline{X}$ = 26.33, SD = 5.03). This meant that nurses sometimes feel trapped or on edge or are overwhelmed, which is influenced by other's trauma during their work. The result was consistent with previous studies in Korea (Kim et al., 2015, 2015b; Lee & Seomun, 2016) and Portugal (Duarte, Pinto-Gouveia, & Cruz, 2016) and congruent with several studies in China (Zhang et al., 2013; Jin et al., 2016; Sun et al., 2016). One possible reason was that the clinical nurses in this study had less possibility of long-term exposure to extremely stressful events than nurses from specific departments, such as ICU, OR, or ER. In addition, nurses always face challenges of resonating patients' suffering during nursing care, and this long-term emotional involvement reduces empathy (Sun et al., 2016) which consequently leads to compassion fatigue.

3. The relationship between resilience and each dimension of professional quality of life

There was a moderately positive relationship between resilience and CS (r_s = .50, $p < .01$) indicating nurses who perceived high resilience feel satisfied from helping others. Those who receive positive reinforcement from work are more likely to be a positive influence on their colleagues and organization: the higher the resilience, the higher the CS. This result was in line with previous studies by McGarry et al. (2013) and Leners et al. (2014) in the U.S. and Hegney et al. (2015) in Australia. Moreover, it could be explained by the Resiliency Model (Richardson, 2002) which states that resilient qualities make people thrive in the face of stressors or adverse life events, and enable individuals with these resilient qualities to cope with any situation after a setback. If a nurse is resilient, it will promote her/his ability to accomplish their job well and get more compassion satisfaction from their nursing duties. Furthermore, Ree et al. (2015) proved that individual psychological resilience explained a significant variance in scores on CS; resilience was confirmed as a key variable impacting the level of CS.

There was a moderately negative relationship between resilience and BO (r_s = –.48, p < .01). This result implied that if nurses have higher resilience, they will experience a lower feeling of burnout. The result was consistent with previous findings by McGarry et al. (2013) which found that professionals at risk of developing more symptoms of burnout have less resilience and compassion satisfaction compared to general population samples. Resilience was regarded as a critical individual factor that critically influences the subsequent psychological functioning of a person, such as in the case of burnout. If nurses use resilience to cope with stress, a reduction in symptoms of burnout will be seen (Rees, Breen, Cusack, & Hegney, 2015).

There was a weakly negative relationship between resilience and compassion fatigue (r_s = –.16, p < .01) indicating that nurses with high resilience will demonstrate low compassion fatigue. This was consistent with a previous study by McGarry et al. (2013) in which the authors stated that participants who experienced more symptoms of secondary traumatic stress showed less resilience. According to Stanton et al. (2015), enhanced resilience is associated with improved empathic responses and overall emotional well-being, which is a central process underlying compassion fatigue. Therefore, when nurses improve their resilience, the level of compassion fatigue will be reduced.

Conclusion

The resilience mean score of the nurses in this study was 64.43 (SD = 11.56). The mean scores for each dimension of professional quality of life were at average levels. There was a moderately positive relationship between resilience and compassion satisfaction, a moderately negative relationship between resilience and burnout, and a weakly negative relationship between resilience and compassion fatigue.

Implications and Recommendations

The findings of this study may contribute to knowledge and provide a better understanding of resilience and professional quality of life, as well as the association between resilience and each dimension of ProQOL. Strategies or interventions to promote resilience for nurses are needed in tertiary hospitals to increase CS and reduce BO and CF. A predictive study on related factors influencing professional quality of life, as well as descriptive research to explore resilience and ProQOL in other regions or in other types of hospitals of China are recommended.

Acknowledgement

I am sincerely appreciate the Faculty of Nursing at Chiang Mai University for partial financial support for this study. Moreover, special appreciation goes to Dr. Jonathan R. T. Davidson, M.D and Dr. Kathryn M. Connor, M.D. for their permission to use the CD-RISC, and to Dr. Beth Hudnall Stamm, PhD. for the ProQOL5. Finally, thanks to the people at the Dali Bai Autonomous Prefecture People's Hospital for their support throughout the research process.

References

Amin, A. A., Vankar, J. R., Nimbalkar, S. M., & Phatak, A. G. (2015). Perceived stress and professional quality of life in neonatal intensive care unit nurses in Gujarat, India. *The Indian Journal of Pediatrics, 82*(11), 1001-1005.

Cameron, F., & Brownie, S. (2010). Enhancing resilience in registered aged care nurses. *Australasian Journal on Ageing, 29*(2), 66-71.

Cocker, F., & Joss, N. (2016). Compassion fatigue among healthcare, emergency and community service workers: A systematic review 618. *International Journal of Environmental Research and Public Health, 13*(6), 1-18.

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*(2), 76-82.

Cooke, G. P., Doust, J. A., & Steele, M. C. (2013). A survey of resilience, burnout, and tolerance of uncertainty in Australian general practice registrars. *BMC Medical Education, 13*(1), 1-6.

Craigie, M., Slatyer, S., Hegney, D., Osseiran-Moisson, R., Gentry, E., Davis, S., ... Rees, C. (2016). A pilot evaluation of a Mindful Self-Care and Resiliency (MSCR) intervention for nurses. *Mindfulness, 7*(3), 764-774.

Drury, V., Craigie, M., Francis, K., Aoun, S., & Hegney, D. G. (2014). Compassion satisfaction, compassion fatigue, anxiety, depression and stress in registered nurses in Australia: Phase 2 results. *Journal of Nursing Management, 22*(4), 519-531.

Duarte, J., Pinto-Gouveia, J., & Cruz, B. (2016). Relationships between nurses' empathy, self-compassion and dimensions of professional quality of life: A cross-sectional study. *International Journal of Nursing Studies, 60*, 1-11.

Gillespie, B. M., Chaboyer, W., & Wallis, M. (2009). The influence of personal characteristics on the resilience of operating room nurses: A predictor study. *International Journal of Nursing Studies, 46*(7), 968-976.

Gu, Y. F., Chuan, J. P., & Zhou, R. (2007). Investigation and analysis of nursing human resources in Dehong Hospital. *Journal of Dali University, 6*, 143-146. (in Chinese)

Hegney, D. G., Rees, C. S., Eley, R., Osseiran-Moisson, R., & Francis, K. (2015). The contribution of individual psychological resilience in determining the professional quality of life of Australian nurses. *Frontiers in Psychology, 6*. doi: 10.3389/fpsyg.2015.01613

Jin, C. H., Su, X. Y., & Lei, C. (2016). The impact of job stress on professional life quality of nurses. *Today Nurse, 2*, 109-110. (in Chinese)

Kim, H. J., & Choi, H. J. (2012). Emergency nurses' professional quality of life: Compassion satisfaction, burnout, and secondary traumatic stress. *Journal of Korean Academy of Nursing Administration, 18*(3), 320-328.

Kim, K., Han, Y., & Kim, J. S. (2015). Korean nurses' ethical dilemmas, professional values and professional quality of life. *Nursing Ethics, 22*(4), 467-478.

Kim, K., Han, Y., Kwak, Y., & Kim, J. S. (2015b). Professional quality of life and clinical competencies among Korean nurses. *Asian Nursing Research, 9*(3), 200-206.

Kornhaber, R. A., & Wilson, A. (2011). Building resilience in burns nurses: A descriptive phenomenological inquiry. *Journal of Burn Care & Research, 32*(4), 481-488.

Lauvrud, C., Nonstad, K., & Palmstierna, T. (2009). Occurrence of post-traumatic stress symptoms and their relationship to professional quality of life (ProQoL) in nursing staff at a forensic psychiatric security unit: A cross-sectional study. *Health and Quality of Life Outcomes, 7*(1), 1-6.

Lee, Y., & Seomun, G. (2016). Role of compassion competence among clinical nurses in professional quality of life. *International Nursing Review, 63*(3), 381-387.

Leners, C., Sowers, R., Griffin, M. Q., & FitzpatricK, J. J. (2014). Resilience and professional quality of life among military healthcare providers. *Issues in Mental Health Nursing, 35*(7), 497-502.

McGarry, S., Girdler, S., McDonald, A., Valentine, J., Lee, S. L., Blair, E., ... Elliott, C. (2013). Paediatric health-care professionals: Relationships between psychological distress, resilience and coping skills. *Journal of Pediatrics and Child Health, 49*(9), 725-732.

Mealer, M., Jones, J., Newman, J., McFann, K. K., Rothbaum, B., & Moss, M. (2012). The presence of resilience is associated with a healthier psychological profile in intensive care unit (ICU) nurses: Results of a national survey. *International Journal of Nursing Studies, 49*(3), 292-299.

Muliira, R. S., & Ssendikadiwa, V. B. (2016). Professional quality of life and associated factors among Ugandan midwives working in Mubende and Mityana Rural Districts. *Maternal and Child Health Journal, 20*(3), 567-576.

Qin, J., Dao, M. N., & Wang, Y. P. (2014). A study on the relationship between organizational commitment and turnover intention in nurses of three hospitals in Dehong Prefecture, Yunnan Province. *Nursing Management, 14*, 63-65. (in Chinese)

Radey, M., & Figley, C. R. (2007). The social psychology of compassion. *Clinical Social Work Journal, 35*, 207-214. doi: 10.1007/s10615-007-0087-3

Rees, C. S., Breen, L. J., Cusack, L., & Hegney, D. (2015). Understanding individual resilience in the workplace: The international collaboration of workforce resilience model. *Frontier in Psychology,* 6. doi: 10.3389/fpsyg.2015.00073

Ren, Y. X., Zhou, Y., Huang, M. L., Lu, X. R., Cheng, S. Z., & Pan, S. M. (2014). An exploratory study on resilience and its influencing factors of nurses. *Chinese Journal of Behavioral Medical Science and Brain Science, 23*(3), 258-260. (in Chinese)

Richardson, G. E. (2002). The metatheory of resilience and resiliency. *Journal of Clinical Psychology, 58*(3), 307-321.

Sabo, B. (2011). Reflecting on the concept of compassion fatigue. *The Online Journal of Issues in Nursing, 16*(1). doi: 10.3912/OJIN.Vol16No01Man01

She, L. F. (2014). The current status of psychological resilience level of ICU nurses. *For All Health, 8*(11). (in Chinese)

Shi, D. H., Zhao, J., & Liu, X. Y. (2011). Investigation and analysis on current situation of nurses' job stress and countermeasures. *Chinese Journal of Practical Nursing, 27*(34), 4-7.

Søndenaa, E., Lauvrud, C., Sandvik, M., Nonstad, K., & Whittington, R. (2013). Resilience and professional quality of life in staff working with people with intellectual disabilities and offending behavior in community based and institutional settings. *Health Psychology Research, 1*(1). doi: 10.4081/hpr.2013.e3

Stamm, B. H. (2009). *The Concise ProQOL Manual*. Pocatello, ID: ProQOL.org.

Stamm, B. H. (2010). *The Concise ProQOL Manual* (2nd Ed.). Pocatello, ID: ProQOL.org.

Stanton, M. P., Houser, R. A., Rieche, M. E., Burnham, J. J., & McDougall, G. (2015). The effect of Transcranial Direct Current Stimulation (TDCS) on resilience, compassion fatigue, stress and empathy in professional nurses. *Advances in Research, 5*(2), 1-11.

Su, Q., Guo, L. l., Liu, K., Zhang, L., Chen, Z., & Lin, X. M. (2013). Research on resilience and influencing factors of clinical nurses. *Medicine and Philosophy, 34*(11B), 68-71. (in Chinese)

Sun, L. Y., Li, J., & Yan, L. (2016). The impact of oncology nurses'compassion fatigue on doctor-patient relationship satisfaction. *Chinese Journal of Practical Nursing, 32*(2), 115-118. (in Chinese)

Yamane, T. (1973). *Statistics: An introductory analysis* (3rd ed.). New York: Harper and Row.

Yang, Y., Xiao, H., Hu, J., & Zou, Y. (2015). Research progress of nursing professional quality of life. *China Journal of Practice Nursing, 31*(20), 1554-1557. (in Chinese)

You, L. M., Aiken, L. H., Sloane, D. M., Liu, K., He, G. P., Hu, Y., ... Sermeus, W. (2013). Hospital nursing, care quality, and patient satisfaction: Cross-sectional surveys of nurses and patients in hospitals in China and Europe. *International Journal of Nursing Studies, 50*(2), 154-161.

Yu, X. N., & Zhang, J. X. (2007). Factor analysis and psychometric evaluation of the Connor-Davidson Resilience Scale (CD-RISC) with Chinese people. *Social Behavior and Personality: An International Journal, 35*(1), 19-30.

Yu, H. R., Jiang, A. l., & Shen, J. (2016). Prevalence and predictors of compassion fatigue, burnout and compassion satisfaction among oncology nurses: A cross-sectional survey. *International Journal of Nursing Studies, 57*, 28-38.

Yu, W. H., Song, J. Y., He, X. L., & Yu, M. (2013). Present situation and prospect of training in accordance with levels for clinical nurses. *Chinese Nursing Management, 13*(1), 57-59.

Zhang, Y. J., Liu, W. f., Wang, Y., & Zheng, J. (2016). Status and influencing factors of psychological resilience of nurses in cadre ward of military hospital in Beijing. *Chinese Journal of Modern Nursing, 22*(9), 1200-1203. (in Chinese)

Zhang, Y. M., Zhu, J., Liu, J., Liu, C. C., Wang, P., Xin, M., & Miao, N. (2013). Status of professional quality of life and its influencing factors among ICU nurses. *Nursing Research, 27*(11), 3481-3485. (in Chinese)